AMENDMENTS TO THE CLAIMS

1. (Withdrawn) A temperature sensitive element, comprising a carbon nanotube in which continuous and columnar indium is included, wherein the length in the axial direction of the columnar indium in the carbon nanotube can be changed with a change in the temperature of an environment.

2. (Withdrawn) The temperature sensitive element according to claim 1, wherein the length in the axial direction of the carbon nanotube is from 1 to 10 μm (inclusive), and the diameter thereof is from 100 to 200 nm (inclusive).

3. (Withdrawn) A nanothermometer, comprising the temperature sensitive element according to claim 1, and comprising a temperature-measuring section for measuring the temperature of an environment by measuring the length in the axial direction of the columnar indium, in the temperature sensitive element, which can be changed with a change in the environment temperature.

4. (Withdrawn) The nanothermometer according to claim 3, wherein the environment temperature in the temperature range of 170 to 400°C (inclusive) is measured.

5. (Withdrawn) The nanothermometer according to claim 3, wherein the error of the measured temperature is within ±0.23°C.

6. (Withdrawn) The nanothermometer according to claim 3, wherein a transmission electron microscope is used in the temperature-measuring section to measure the length in the axial direction of the columnar indium in the carbon nanotube.

7. (Currently amended) A process for producing a temperature sensitive element comprising a carbon nanotube in which continuous and columnar indium is included, wherein the length in the axial direction of the columnar indium in the carbon nanotube

can be changed with a change in the temperature of an environment, ~~according to claim 1,~~ comprising ~~the step of~~

mixing indium oxide powder and carbon powder into a uniform state, ~~the step of~~

subjecting the mixed powder to heating treatment at a temperature of 900 to 1400°C (inclusive) under inert gas flow, thereby vaporizing the mixture, and ~~the step of~~

causing the vapor to react at a temperature of 800 to 850°C (inclusive).

8. (Original) The process for producing a temperature sensitive element according to claim 7, wherein the weight ratio of the indium oxide powder to the carbon powder is from 6 : 1 to 15 : 1.

9. (Previously presented) The process for producing a temperature sensitive element according to claim 7, wherein the carbon powder is amorphous activated carbon.

10. (Previously presented) The process for producing a temperature sensitive element according to claim 7, wherein the inert gas is nitrogen gas.

11. (Previously presented) The process for producing a temperature sensitive element according to claim 7, wherein a vertical high frequency induction heating furnace is used to conduct the heating treatment.

12. (Previously presented) The process for producing a temperature sensitive element according to claim 7, wherein the heating treatment is conducted at a temperature of 1200 to 1400°C (inclusive) for one hour or more.

13. (Withdrawn) A nanothermometer, comprising the temperature sensitive element according to claim 2, and comprising a temperature-measuring section for measuring the temperature of an environment by measuring the length in the axial direction of the columnar indium, in the temperature sensitive element, which can be changed with a change in the environment temperature.

14. (Withdrawn) The nanothermometer according to claim 4, wherein the error of the measured temperature is within ±0.23°C.

15. (Withdrawn) The nanothermometer according to claim 4, wherein a transmission electron microscope is used in the temperature-measuring section to measure the length in the axial direction of the columnar indium in the carbon nanotube.

16. (Withdrawn) The nanothermometer according to claim 5, wherein a transmission electron microscope is used in the temperature-measuring section to measure the length in the axial direction of the columnar indium in the carbon nanotube.

17. (Currently amended) A process for producing a temperature sensitive element according to claim ~~2,~~7, wherein the length in the axial direction of the carbon nanotube is from 1 to 10 μm (inclusive), and the diameter thereof is from 100 to 200 nm (inclusive).~~comprising the step of mixing indium oxide powder and carbon powder into a uniform state, the step of subjecting the mixed powder to heating treatment at a temperature of 900 to 1400°C (inclusive) under inert gas flow, thereby vaporizing the mixture, and the step of causing the vapor to react at a temperature of 800 to 850°C (inclusive).~~

18. (Previously presented) The process for producing a temperature sensitive element according to claim 8, wherein the carbon powder is amorphous activated carbon.

19. (Previously presented) The process for producing a temperature sensitive element according to claim 8, wherein the inert gas is nitrogen gas.

20. (Previously presented) The process for producing a temperature sensitive element according to claim 9, wherein the inert gas is nitrogen gas.

21. (Previously presented) The process for producing a temperature sensitive element according to claim 8, wherein a vertical high frequency induction heating furnace is used to conduct the heating treatment.

22. (Previously presented) The process for producing a temperature sensitive element according to claim 9, wherein a vertical high frequency induction heating furnace is used to conduct the heating treatment.

23. (Previously presented) The process for producing a temperature sensitive element according to claim 10, wherein a vertical high frequency induction heating furnace is used to conduct the heating treatment.

24. (Previously presented) The process for producing a temperature sensitive element according to claim 8, wherein the heating treatment is conducted at a temperature of 1200 to 1400°C (inclusive) for one hour or more.

25. (Previously presented) The process for producing a temperature sensitive element according to claim 9, wherein the heating treatment is conducted at a temperature of 1200 to 1400°C (inclusive) for one hour or more.

26. (Previously presented) The process for producing a temperature sensitive element according to claim 10, wherein the heating treatment is conducted at a temperature of 1200 to 1400°C (inclusive) for one hour or more.

27. (Previously presented) The process for producing a temperature sensitive element according to claim 11, wherein the heating treatment is conducted at a temperature of 1200 to 1400°C (inclusive) for one hour or more.